REMARKS

Claims 11-20 are pending in the application. Claims 11, 13, and 16 have been amended to overcome the rejections under 35 USC 112, second paragraph. Claims 11 and 16 have been amended to delete the words "predecessor" and "successor" to avoid redundancy, but are not amended substantively. The amendments are fully supported by the application as originally filed.

In response to the drawing objection, a replacement sheet of FIG. 2 is provided, in which text labels have been added to the block elements. No new matter is added. Approval of the replacement drawing sheet is respectfully requested.

In the specification, the abstract has been amended to delete the last line, as suggested by the Examiner, thereby obviating the objection.

Claims 11-20 were rejected under 35 USC 112, second paragraph, as being indefinite due to lack of antecedent basis because of the limitations "the first picture block" in claims 11 and 16, and "the digitized picture" in claim 13. Claims 11, 13, and 16 have been amended to provide proper antecedent basis for these limitations. It is respectfully requested that the rejection under 35 USC 112, second paragraph, be withdrawn.

Applicants' claimed invention is directed to a method and an arrangement for motion estimation in a digitized image having pixels, where the pixels are grouped into picture blocks, and the picture blocks are divided into a first picture area and a second picture area (see, e.g., specification at page 9, lines 9-11; FIG. 1A).

As recited in claims 11 and 16, a first motion estimation is carried out in a first search area for a first picture block of the first picture area to determine a first motion vector with respect to a preceding and/or a subsequent picture. A second motion estimation is carried out in a second search area for a second picture block of the second picture area to determine a second motion vector with respect to a preceding and/or a subsequent picture.

As recited in claims 11 and 16, the first and second search areas are of different sizes. The Applicants' claimed invention proposes to vary the size of the first search area used for the first motion estimation and/or the size of the second search area used for the second motion estimation as a function of a predetermined picture quality according to which the first picture block and/or the second picture block are coded (see, e.g., specification at page 10, lines 33-36, where the second search area 116 of FIG. 1C is smaller than the first search area 114 of FIG. 1B, due to reduced picture quality).

Applicants' invention can provide significant benefits. By varying the sizes of the first and/or second search areas as a function of the predetermined picture quality, it is possible to reduce the required data rate, taking into account the required picture quality. For example, a small search area can be provided in regions where low quality is acceptable. Therefore, the maximum size of a motion vector in this search area would be relatively small, which reduces the number of bits for coding the motion vector.

Claims 11-20 were rejected under 35 USC 102(b) as being anticipated by U.S. Patent 5,537,155 to O'Connell et al. (hereinafter "O'Connell"). This rejection is respectfully traversed.

O'Connell does not teach or suggest a method or arrangement for motion estimation in which the sizes of first and second search areas are varied as a function of **picture quality** according to which the first picture block and/or the second picture block are coded.

O'Connell describes a video compression method in which motion is estimated between individual pictures in a video sequence (see column 3, lines 10-12). Motion is estimated using a clock-matching algorithm that compares picture blocks in a current picture/video frame with picture blocks in a preceding picture/video frame (see column 3, lines 12-14). This comparison is made in different search areas using different step widths (density levels). In particular, the search is carried out around the current picture block in a first search area using a high density level, and then the search is carried out in larger areas of decreasing density levels around the current picture block (see column 3, lines 16-32). Once a reasonable determination of motion

has been made, the appropriate block in the preceding picture that most closely matches the current picture block can be used to encode the current picture (see column 3, lines 32-38).

O'Connell does not teach or suggest that the size of the search areas is varied as a function of picture quality. In particular, there is no disclosure in O'Connell of conducting two different motion estimations with respect to two different search areas, the size of the first and second search areas being varied as a function of a predetermined picture quality according to which the first picture block and/or the second picture block are encoded (see claims 11 and 16).

In O'Connell, there is no teaching or suggestion that different picture blocks are coded differently (see picture blocks in FIG. 3, which are coded similarly). In contrast, the Applicants' claimed invention requires that the first and second picture blocks used for performing the first and second motion estimations, respectively, are coded according to picture quality (i.e., the second picture area 106 has a reduced picture quality as compared to the first picture area 105 in FIG. 1A).

For at least the reasons described above, O'Connell does not anticipate or otherwise render obvious the Applicants' claimed invention.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,

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Peter F. Corless (Reg. No. 33,860)
Steven M. Jensen (Reg. No. 42,693)
EDWARDS & ANGELL, LLP
P.O. Box 55874
Boston, MA 02205

Phone: (617) 439-4444

Customer No. 21874